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TITLE: Apparatus and method for remote data recovery

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INVENTOR-INFORMATION:

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CLAIMS:

What is claimed is:

1. A method for remotely recovering data from a storage medium in a local computer having a normal operating system, the method comprising the steps of:

loading into a removable media storage device of the local computer a removable storage medium including a bootable remote data recovery operating program pre-recorded thereon:

loading into memory of the local computer, the bootable remote data recovery operating program from the removable storage medium, the bootable remote data recovery operating program being operated locally by the local computer and independently of the normal operating system;

establishing communications between the local computer and a remote data recovery computer through operation of the remote data recovery operating program by the local computer; and

remotely controlling the local computer by the remote data recovery computer, whereupon data on the storage medium of the local computer can be diagnosed and rectified through operation of the remote data recovery computer.
2. A method in accordance with claim 1, further including the step of querying a local computer user for information through operation of the remote data recovery operating program by the local computer prior to establishing communication with the remote data recovery computer.
3. A method in accordance with claim 2, further including the step of querying the local computer user for data recovery information through operation of the remote data recovery operating program by the local computer prior to establishing communication with the remote data recovery computer.
4. A method in accordance with claim 2, further including the step of querying the local computer user for user identifying information through operation of the remote data recovery operating program by the local computer prior to establishing communication with the remote data recovery computer.

5. A method in accordance with claim 1, further including the step of monitoring operation of data recovery programs executing on the local computer via a display at the remote data recovery computer.

6. A method in accordance with claim 5, wherein the step of monitoring includes monitoring the storage medium containing the remote data recovery operating program for data recovery application programs.

7. A method in accordance with claim 1, further including the step of controlling operation of data recovery programs executing on the local computer by a computer input device at the remote data recovery computer.

8. A method in accordance with claim 1, further including the step of controlling appearance of a local display on the local computer by the remote data recovery computer.

9. A method in accordance with claim 1, further including the step of monitoring appearance of a local display on the local computer by a remote display on the remote data recovery computer.

10. A method in accordance with claim 1, further including the step of downloading a data recovery application program from the remote data recovery computer to the local computer.

11. A method in accordance with claim 1, further including the step of downloading a data recovery diagnostic program from the remote data recovery computer to the local computer.

12. A method in accordance with claim 11, wherein the step of downloading includes downloading a data recovery application program onto a storage medium at the local computer.

13. A method in accordance with claim 1, further including the step of executing a data recovery application program at the local computer.

14. A method in accordance with claim 1, further including the step of executing a data recovery diagnostic program at the local computer.

15. A method in accordance with claim 1, further including the step of downloading data to be recovered from the local computer to the remote data recovery computer.

16. A method in accordance with claim 1, further including the steps of downloading a data recovery application program from the remote data recovery computer to the local computer and executing the data recovery application program.

17. A method in accordance with claim 1, wherein the step of establishing communications establishes communications through a communications server, and further including the step of establishing communications between a second remote data recovery computer and a second local computer through the communications server for data recovery.

18. A method in accordance with claim 1, including the step of deferring changes in data to the local computer until such time as an operator of the remote data recovery computer makes the decision to continue or; alternatively, abandon the changes in data.

19. A method in accordance with claim 18, further including the step of wherein if a decision is made to commit the changes in data to the local computer, then all data which is marked for being changed is first transferred to an archival

facility at the remote data recovery computer for archival.

20. A method in accordance with claim 19, including the step of logging all write activity, to be performed on a sector of a local storage device of the local computer, to a file at the remote data recovery computer.

21. A method in accordance with claim 20, further including the step of providing each entry within the file with an identifier which identifies the sector and local storage device, as well as the latest data which was written to that sector.

22. A data recovery system for recovering inaccessible data from a data storage medium, comprising:

a local computer associated with the data storage medium, the local computer having a central processor unit, memory, a removable media storage device and a normal operating system;

a remote data recovery computer;

a removable data storage medium to be loaded into the removable media storage device of the local computer the removable data storage medium comprising bootable data recovery program means pre-recorded thereon; and

bootable remote data recovery program means to be loaded into the memory of the local computer for operating the local computer independently of the normal operating system and to establish communications between the local computer and the remote data recovery computer;

wherein the local computer is remotely controlled by the remote data recovery computer so that data on the data storage medium of the local computer can be diagnosed and rectified.

23. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means comprises bootable operating system means for operating the local computer.

24. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means comprises data recovery diagnostic program means.

25. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means comprises data recovery application program means.

26. A data recovery system in accordance with claim 22, wherein the remote data recovery computer comprises a second data storage medium for storing data recovery application program means, said data recovery application program means being downloadable from the remote data recovery computer to the local computer.

27. A data recovery system in accordance with claim 22, further comprising a communications channel over which communications are established between the local computer and the remote data recovery computer, the communications channel using one of the group consisting of a telephone line, a local area network, a wide area network and Internet.

28. A data recovery system in accordance with claim 22, wherein the remote data recovery computer comprises a display for monitoring data recovery application programs at the local computer.

29. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means comprises a program for querying a user of

the local computer for user information.

30. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means comprises a program for querying a user of the local computer for data recovery information.

31. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means is operable from the remote data recovery computer so as to recover data from the data storage medium.

32. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means is operable from the remote data recovery computer so as to diagnose a data recovery situation on the data storage medium.

33. A data recovery system in accordance with claim 22, wherein the bootable remote data recovery program means is operable from the remote data recovery computer so as to download data to be recovered to the remote data recovery computer.

34. A method for remotely recovering data from a storage medium of a local computer, the method comprising the steps of:

loading into a removable media storage device of the local computer a removable storage medium including a remote data recovery application program pre-recorded thereon;

loading the remote data recovery application program from the removable storage medium into memory of the local computer;

establishing communications between the local computer and a remote data recovery computer through operation of the remote data recovery application program by the local computer; and

remotely controlling the local computer by the remote data recovery computer, whereupon data on the storage medium of the local computer can be diagnosed and rectified through operation of the remote data recovery computer.

35. A method in accordance with claim 34, further comprising the step of displaying selected data recovery information on a local display associated with the local computer.

36. A data recovery system for recovering inaccessible data from a data storage medium, comprising:

a local computer associated with the data storage medium, the local computer having memory and a removable media storage device;

a remote data recovery computer;

a removable data storage medium to be loaded into the removable media storage device of the local computer the removable data storage medium comprising remote data recovery program means pre-recorded thereon; and

the remote data recovery program means to be loaded into the memory of the local computer to establish communications between the local computer and the remote data recovery computer;

wherein the remote data recovery program means permits the local computer to be remotely controlled by the remote data recovery computer for diagnosing and rectifying data on the data storage medium.

37. A data recovery system in accordance with claim 36, including means for

deferring all changes in data to the local computer until such time as an operator of the remote data recovery computer makes the decision to continue or, alternatively, abandon the changes in data.

38. A data recovery system in accordance with claim 37, wherein if a decision is made to commit the changes in data to the local computer, including means for transferring all data which is marked for being changed to an archival facility at the remote data recovery computer for archival before making the changes at the local computer.

39. A data recovery system in accordance with claim 38, including means for logging all write activity, to be performed on a sector of a local storage device of the local computer, to a file at the remote data recovery computer.

40. A data recovery system in accordance with claim 39, wherein each entry within the file contains an identifier which identifies the sector and local storage device, as well as the latest data which was written to that sector.

41. A data recovery system in accordance with claim 36, including means selected data recovery events during a data recovery process.

42. A method for remotely recovering data from a local computer having a normal operating system, the method comprising the steps of:

loading into memory of the local computer, a bootable remote data recovery operating program from a storage medium, the bootable remote data recovery operating program being operated locally by the local computer and independently of the normal operating system;

establishing communications between the local computer and a remote data recovery computer through operation of the remote data recovery operating program by the local computer;

remotely controlling the local computer by the remote data recovery computer, whereupon data recovery can be performed through operation of the remote data recovery computer; and

downloading a data recovery application program from the remote data recovery computer to the local computer.

43. A method in accordance with claim 42, including the step of deferring changes in data to the local computer until such time as an operator of the remote data recovery computer makes the decision to continue or, alternatively, abandon the changes in data.

44. A method in accordance with claim 43, further including the step of wherein if a decision is made to commit the changes in data to the local computer, then all data which is marked for being changed is first transferred to an archival facility at the remote data recovery computer for archival.

45. A method in accordance with claim 44, including the step of logging all write activity, to be performed on a sector of a local storage device of the local computer, to a file at the remote data recovery computer.

46. A method in accordance with claim 45, further including the step of providing each entry within the file with an identifier which identifies the sector and local storage device, as well as the latest data which was written to that sector.

47. A method in accordance with claim 42, further including the step of monitoring operation of data recovery programs executing on the local computer via a display at the remote data recovery computer.

48. A method in accordance with claim 47, wherein the step of monitoring includes monitoring the storage medium containing the remote data recovery operating program for data recovery application programs.

49. A method in accordance with claim 42, further including the step of controlling operation of data recovery programs executing on the local computer by a computer input device at the remote data recovery computer.

50. A method in accordance with claim 42, further including the step of controlling appearance of a local display on the local computer by the remote data recovery computer.

51. A method in accordance with claim 42, further including the step of monitoring appearance of a local display on the local computer by a remote display on the remote data recovery computer.

52. A method in accordance with claim 42, further including the step of downloading a data recovery diagnostic program from the remote data recovery computer to the local computer.

53. A method in accordance with claim 52, wherein the step of downloading includes downloading a data recovery application program onto a storage medium at the local computer.

54. A method in accordance with claim 42, further including the step of executing a data recovery application program at the local computer.

55. A method in accordance with claim 42, further including the step of executing a data recovery diagnostic program at the local computer.

56. A method in accordance with claim 42, further including the step of downloading data to be recovered from the local computer to the remote data recovery computer.

57. A method in accordance with claim 42, further including the steps of downloading a data recovery application program from the remote data recovery computer to the local computer and executing the data recovery application program.

58. A method in accordance with claim 42, wherein the step of establishing communications establishes communications through a communications server, and further including the step of establishing communications between a second remote data recovery computer and a second local computer through the communications server for data recovery.

59. A data recovery system for recovering inaccessible data from a data storage medium, comprising:

a local computer associated with the data storage medium, the local computer having memory;

a remote data recovery computer; and

remote data recovery program means to be loaded into the memory of the local computer to establish communications between the local computer and the remote data recovery computer;

wherein the remote data recovery program means permits the local computer to be remotely controlled by the remote data recovery computer for recovery of data from the data storage medium; and

downloading a data recovery application program from the remote data recovery computer to the local computer.

60. A data recovery system in accordance with claim 59, including means for deferring all changes in data to the local computer until such time as an operator of the remote data recovery computer makes the decision to continue or, alternatively, abandon the changes in data.

61. A data recovery system in accordance with claim 60, wherein if a decision is made to commit the changes in data to the local computer, including means for transferring all data which is marked for being changed to an archival facility at the remote data recovery computer for archival before making the changes at the local computer.

62. A data recovery system in accordance with claim 61, including means for logging all write activity, to be performed on a sector of a local storage device of the local computer, to a file at the remote data recovery computer.

63. A data recovery system in accordance with claim 62, wherein each entry within the file contains an identifier which identifies the sector and local storage device, as well as the latest data which was written to that sector.

64. A data recovery system in accordance with claim 59, including means selected data recovery events during a data recovery process.

65. A method in accordance with claim 48, further including the step of querying a local computer user for information through operation of the remote data recovery operating program by the local computer prior to establishing communication with the remote data recovery computer.

66. A method in accordance with claim 65, further including the step of querying the local computer user for data recovery information through operation of the remote data recovery operating program by the local computer prior to establishing communication with the remote data recovery computer.

67. A method in accordance with claim 65, further including the step of querying the local computer user for user identifying information through operation of the remote data recovery operating program by the local computer prior to establishing communication with the remote data recovery computer.

68. A method of data recovery comprising the steps of:

establishing a communications link between a local computer having a data storage device requiring recovery of data and a remote data recovery computer;

enabling interaction between the local computer and the remote data recovery computer;

maintaining access to data recovery programs resident at the remote data recovery computer;

diagnosing the data storage device;

downloading a data recovery application program from the remote data recovery computer to the local computer; and

recovering data on the data storage device of the local computer.

69. The method of claim 68, wherein the step of establishing a communications link comprises establishing a communications link over one of the group consisting of a modem, a local area network, a wide area network and Internet.

70. A method for remotely recovering data from a local computer, the method comprising the steps of:

loading a remote data recovery application program from a storage medium into memory of the local computer

establishing communications between the local computer and a remote data recovery computer through operation of the remote data recovery application program by the local computer;

downloading a data recovery application program from the remote data recovery computer to the local computer; and

remotely controlling the local computer by the remote data recovery computer, whereupon data recovery can be performed through operation of the remote data recovery computer.

71. A method in accordance with claim 70, further comprising the step of displaying selected data recovery information on a local display associated with the local computer.